

of surplus electric power of the secondary battery, an
information of the load, and an information of the electric
power storage unit into the control unit;

wherein a discharging of the secondary battery is
controlled by the charge/discharge unit.

41. A secondary battery system according to claim 40,
wherein the secondary battery charges electric power during
night period rate hours at night and discharges electric power
during day period rate hours at daytime.

42. A secondary battery system according to claim 40,
wherein the secondary battery charges through the
charge/discharge unit and/or discharges through the
charge/discharge unit.

43. A secondary battery system according to claim 40,
wherein a memory which is part of the secondary battery or
which is connected to the secondary battery stores information
of discharging of the secondary battery and/or charging of the
secondary battery.

44. A secondary battery system according to claim 43,
wherein information is further stored in the memory of at
least one of a charging capacity of the secondary battery, a
possible discharging capacity of the secondary battery and/or

a life of the secondary battery predicted by the change of the charging capacity.

45. A secondary battery system for illumination, the system comprising:

a secondary battery that can charge and discharge;

a charge/discharge unit connected to a power system and to the secondary battery; and

a signal line connected with the charge/discharge unit and a load for illumination;

wherein discharging of the secondary battery is controlled in accordance with information of the load for illumination.

46. A secondary battery system for illumination according to claim 45, wherein the charge/discharge unit or a control unit has a timer which controls charging and/or discharging time of the secondary battery.

47. A secondary battery system of an electric vehicle, the system comprising:

a secondary battery that can charge and discharge;

a charge/discharge unit connected to a power system and to the secondary battery; and

a signal line connected with the charge/discharge unit and a load of the electric vehicle;

27

wherein discharging of the secondary battery is controlled by information of the load of the electric vehicle.

48. A secondary battery power storage system for supplying residual electric power stored in a secondary battery to an external power supply system comprising:
a secondary battery connected to a secondary battery load;

a connection unit connected to the secondary battery and to the power supply system and to either a plurality of loads or a plurality of electric power storage units;

a detecting device for detecting residual electric power stored in the secondary battery; and

a control unit for controlling the connection unit on the basis of information regarding the detected residual electric power from the secondary battery and of information regarding operating condition of at least one of the loads of the plurality of loads and of information regarding operating condition of at least one of the units of the plurality of the electric power storage units.

49. A secondary battery power system according to claim 48, wherein for discharging the residual electric power, said connection unit selects at least a load of said plurality of loads or a unit of said plurality of electric power storage units depending on the residual electric power stored in the

secondary battery, wherein a controller receives information from at least either the secondary or the plurality of loads and controls the connection unit.

50. A secondary battery power system according to claim 49, further comprising a computer that measures the amount of electric power charged into and the amount of electric power discharged from the secondary battery, calculates the amount of residual electric power stored in the secondary battery, and comprises a memory for storing measured data of the secondary battery and arithmetic program information, and a controller for processing the information stored in the memory or information given thereto from external devices, and an analog-to-digital converter through which information provided by the external devices is given to the controller.

51. A secondary battery power system according to claim 50, wherein the secondary battery, the computer and the analog-to-digital converter are integrated.

52. A secondary battery power system according to claim 50, further comprising measuring means for measuring data on discharge history including discharge current data, discharge voltage data and discharge temperature data and on charge history including charge current data, charge voltage data and charge temperature data; and a computer that receives

information from the measuring means.

53. A secondary battery power system according to claim 50, wherein the memory stores information on a charging method specifying at least one of the intrinsic characteristics of the secondary battery including charging efficiency, discharging efficiency and temperature characteristic, and optimum charge conditions including a maximum charge capacity, a charge current, a charge time, a charge voltage and an upper limit voltage, and information on discharging method specifying at least one optimum discharge condition including a maximum discharge capacity, a discharge current, a discharge time, a discharge voltage and a lower limit voltage.

54. A secondary battery power system according to claim 50, wherein the memory stores an arithmetic program for determining discharge capacity by integrating discharge current data given to the analog-to-digital converter, wherein the arithmetic program determines charge capacity by integrating charge current data, and determines a converted charge capacity by converting charge capacity in a real-time mode into available capacity at a discharging rate and a temperature condition when the discharge current data is received on the basis of a discharging efficiency and a temperature characteristic stored in the memory, and a program calculates and indicates a residual capacity in a real-time

mode by subtracting the discharge capacity determined in a
real-time mode from the converted charge capacity determined
in a real-time mode.

55. A secondary battery power system according to claim
48, wherein for discharging a residual electric power of said
secondary battery said connection unit selects at least a load
of said plurality of loads or a unit of said plurality of
electric power storage units depending on the residual
electric power stored in the secondary battery, further
comprising an information transmitter for interconnecting the
controller and at least either the connection means or the
plurality of loads connected to the connection unit.

56. An electric power supplying system comprising:
at least one of a power supply system for generating or
transmitting electric power;

a plurality of secondary battery power storage systems
for supplying residual electric power stored in a secondary
battery to an external power supply system comprising:

a secondary battery connected to a secondary battery
load;

a connection unit connected to the secondary battery and
to the power supply system and to either a plurality of loads
or a plurality of electric power storage units;

a detecting device for detecting residual electric power

stored in the secondary battery; and

a control unit for controlling the connection unit on the basis of information regarding the detected residual electric power from the secondary battery and of information regarding operating condition of at least one of the loads of the plurality of loads and of information regarding operating condition of at least one of the units of the plurality of the electric power storage units.

57. An electric power supplying system according to claim 56, wherein for discharging the residual electric power, said connection unit selects at least a load of said plurality of loads or a unit of said plurality of electric power storage units depending on the residual electric power stored in the secondary battery, wherein a controller receives information from at least either the secondary or the plurality of loads and controls the connection unit.

58. An electric power supplying system according to claim 57, further comprising a computer that measures the amount of electric power charged into and the amount of electric power discharged from the secondary battery, calculates the amount of residual electric power stored in the secondary battery, and comprises a memory for storing measured data of the secondary battery and arithmetic program information, and a controller for processing the information

32

stored in the memory or information given thereto from
external devices, and an analog-to-digital converter through
which information provided by the external devices is given to
the controller.

59. An electric power supplying system according to
claim 58, wherein the secondary battery, the computer and the
analog-to-digital converter are integrated.

60. An electric power supplying system according to
claim 58, further comprising measuring means for measuring
data on discharge history including discharge current data,
discharge voltage data and discharge temperature data and on
charge history including charge current data, charge voltage
data and charge temperature data; and a computer that receives
information from the measuring means.

61. An electric power supplying system according to
claim 58, wherein the memory stores information on a charging
method specifying at least one of the intrinsic
characteristics of the secondary battery including charging
efficiency, discharging efficiency and temperature
characteristic, and optimum charge conditions including a
maximum charge capacity, a charge current, a charge time, a
charge voltage and an upper limit voltage, and information on
discharging method specifying at least one optimum discharge

condition including a maximum discharge capacity, a discharge current, a discharge time, a discharge voltage and a lower limit voltage.

62. An electric power supplying system according to claim 58, wherein the memory stores an arithmetic program for determining discharge capacity by integrating discharge current data given to the analog-to-digital converter, wherein the arithmetic program determines charge capacity by integrating charge current data, and determines a converted charge capacity by converting charge capacity in a real-time mode into available capacity at a discharging rate and a temperature condition when the discharge current data is received on the basis of a discharging efficiency and a temperature characteristic stored in the memory, and a program calculates and indicates a residual capacity in a real-time mode by subtracting the discharge capacity determined in a real-time mode from the converted charge capacity determined in a real-time mode.

63. An electric power supplying system according to claim 56, wherein for discharging a residual electric power of said secondary battery said connection unit selects at least a load of said plurality of loads or a unit of said plurality of electric power storage units depending on the residual electric power stored in the secondary battery, further